Input Instructions to the Wetland Package
The first layer type specified in the BCF must be unconfined layer (laycon=1). The second layer type must be confined/unconfined with layer type 3 (laycon=3). Muck/peat is considered to be contained within the wetland surface water top layer (i.e., layer one).

For Each Simulation;
mxwtld, mxgrdsl, iwtlout

     Herein, a subset of two-dimensional arrays is used to describe the parameters of the wetland system. Only values in the array within the wetland areas are redefined (or updated) by the wetland package. However you must provide a value for every cell in the layer.

Array(ncol,nrow)	Utilily	description
1. ibnd_wtl	u2dint	define wetland areas greater or equal to one and non-wetland areas equal to zero
2. hymuc	u2drel	horizontal hydraulic conductivity of the muck/peat
3. vhymucr	u2drel	anisotropy ratio in the muck/peat areas
4. zbott	u2drel	elevation of the muck/peat top surface (e.g. land surface)
5. vhyly2r	u2drel	anisotropic ratio in the model layer underlying the wetland
6. capfrng	u2drel	capillary fringe
7. hyc_kdl	u2drel_wtl	kadlec conductance coefficient for overland flow -kadlec conductivity- without taking into account any preferential flow ways or barriers

If the simulation is transient:

Array(ncol,nrow)	Utilily	description
8. symuc	u2drel_wtl	specific yield of the muck/peat
9. sywtl	u2drel_wtl	specific yield of the surface water body

  10. alfac, betac   exponents of the hydraulic slope in the kadlec equation, and of the hydraulic head in the kadlec equation, respectively.

    The iloc flag is used to describe both surface and groundwater flow ways and/or interactions with levees in wetland areas. If a surface water feature (e.g., slough, channel, levee, lake, air boat trail) is present in a wetland cell, then iloc is read as a value greater than zero, in the niloc array. A wetland cell with no features present, is not listed in the following table.

11. niloc: the following record should appear niloc times	If iloc:	surface water feature description
row, col, iloc, whyrat, mxlay	1	slough or channel with interphase computed
row, col, iloc, whyrat, mxlay, lvfp, lvfs, f_slugh	2	slough or channel with interphase provided
row, col, iloc, whyrat,	3	air boat trail
row, col, iloc, mxlay, lvfp, lvfs, f_barrier	4	levee with interphase provided
row, col, iloc, whyrat	5	lake

In the case of a fixed format, a value has a 10 spaces field width within a record. If an integer number does not require the entire field width, then the number should be right justified within the field. If a real number does not require the entire field width, then the number must be within the field. In the case of a free format, the field of the values is not fixed. Each value can consist of any number of digits/characters. One or more spaces, or a single comma optionally combined with spaces, must separate adjacent values.

Dictionary of Variables used in MODFLOW coupled with the Wetland Package

Variable	range	definition
mxwtld		maximum number of actual surface wetland features cells active during the simulation.
mxgrdsl		maximum number of cells at any place within the width of the slough that are going to be considered in the direction calculation of a given cell. value should be less than 6 (if any iloc=1).
iwtlout		both a flag and a unit number for wetland detail echo data set. warning and basic information always are echoed in the modflow list file (main ascii output)
	=0	no echoes written
	>0	echo full output is written in a specific wetlands (ascii) list file (wetlands.out)
	<0	echo with an abbreviated output is written in modflow list file
ibnd_wtl		is the wetland boundary array. one value is read for every model cell at the top layer.
	=0	non-wetland areas
	>0	wetland areas
hymuc		horizontal hydraulic conductivity of the wetland muck/peat.
symuc		specific yield of the muck/peat array, read only for a transient simulation
vhymucr		ratio of vertical hydraulic conductivity to horizontal hydraulic conductivity array in the muck/peat areas.
zbott		elevation of the muck/peat top surface array.
vhyly2r		ratio of vertical hydraulic conductivity to horizontal hydraulic conductivity array in the layer underlying wetlands.
capfrng		muck/peat capillary fringe array.
hyc_kdl		equivalent hydraulic conductance array for each wetland cell.
sywtl		specific yield array of the wetland water body, read only for a transient simulation.
alfac		exponent of the hydraulic slope in the kadlec equation (it is not implemented).
betac		exponent of the hydraulic head in the kadlec equation.
nwtlnd		number of actual surface wetland features cells active during the simulation, defined by the user.
row,col		wetland cell location
iloc		flag for each cell which indicates water ways and levees.
	1	slough-channel with interphase computed (1-3)
	2	slough-channel with interphase provided (4)
	3	air-boat trail (2)
	4	levee with interphase provided (5)
	5	lake (6)
mxlay		maximum number of layers penetrated by water body (it can be either one or two)
lvfp		code indicating primary block interface for the slough or levee.
	0-4	0: not needed; 1: right face; 2: bottom face, 3: left face, 4: top face
lvfs		code indicating secondary block interface for the slough or levee.
	0-4	0: not needed; 1: right face; 2: bottom face, 3: left face, 4: top face
f_barrier		factor used to multiply the aquifer interblock conductance to represent a <u>levee face</u>. faces are perpendicular to the direction of flow. (if a wall is to be represented, a value less than 0.005 should be selected)
f_slough		factor used to multiply the aquifer interblock conductance to represent a <u>slough face</u>. faces are toward the direction of flow (should be between 1.0 and 2.0)
whyrat		factor used to multiply the cell horizontal hydraulic conductivity to increase the slough, wetland channels, or air boat horizontal hydraulic conductivity in wetland cells.